A Toolkit for the Prehistoric Farmer

The theme of Kansas Archeology Week for 2001 is prehistoric agriculture. In the last issue, we talked about the plants that were raised in Kansas over a thousand years ago. In this issue we take a look at the tools that were used to plant, process, cook, and store the crops that people raised.

Farming today relies upon large machinery powered by fossil fuels, but in the past people made effective farming tools from materials at hand. They chipped hoe blades from slabs of chert and lashed the shaped stones to wooden handles. They added durable bone tips to wooden digging sticks for planting and loosening soil. People also used the shoulder blades (scapulae) of bison to plant seeds and dig pits for storing crops. They prepared seeds for cooking on grinding stones and made clay pots to cook the foods that were raised.

Digging sticks

A sharpened, hardened stick was used to break the prairie sod to dig roots or plant seeds. Sometimes a bison leg bone was added to make a more durable digging stick tip. One end of the bone was removed with an angled cut that created a blade-like tip. A hole was drilled in the end of the bone, and a handle was inserted. Because bison bones are large and thick, these digging stick tips would last over many seasons.

Stone hoes

The early residents of Kansas used chert–a widely available, very hard, fine-grained stone–for a wide array of tools, including sharp tips for spears and arrows, knives, and hide scrapers. Among the largest chipped stone tools are hoes. A slab of chert was shaped into a thin, oval shaped tool about eight inches long. This piece was attached to a handle to serve as the blade of a hoe. After a long period of use, a stone hoe took on a lustrous polish. If the blade became dull, it was resharpened by chipping off the worn edge. Stone hoes are not very common from archeological sites in Kansas but are more often found farther east. This may be because of the presence of bison here in the Great Plains. The shoulder blade of a bison makes a great hoe.

Bison shoulder blade hoes

The scapula of the American bison is a large, flat bone. This bone was saved when a bison was butchered, and the spine was removed from the flat side. It was then attached to a handle and used as a hoe. Sometimes archeologists find a bone hoe that had split and been repaired by drilling holes in either side of the split and lashing it together with sinew. Bison bone hoes are found frequently in Kansas archeological sites that date from about A.D. 1 until metal was introduced in approximately A.D. 1600.

Grinding stones

Seed crops, both gathered and grown, needed to be processed before they were eaten. They could be boiled and eaten as a gruel or cereal, or they could be ground into flour. Seeds, such as corn kernels, were placed on a large, flat, heavy stone, called a metate (me-TAT-tay) and ground with a smaller, rounded hand-held stone called a mano (MA-no, meaning “hand” in Spanish). The flour could be used to thicken soups

A well worn bison shoulder blade hoe with crack lace holes was finally discarded and later recovered from an archeological site.

The illlustration on the opposite page shows how bison scapula hoe blades were attached to wooden handles and used to cultivate crops.

This bison leg bone digging stick tip was in good condition when exposed during excavation.

An experimental archeologist attaches a wooden handle to a modern replica of the type of digging stick tip used by prehistoric Kansas farmers.

Archeologists uncover a grinding slab and hand stone during excavation of a prehistoric village site.

and stews or to make flat bread. Grinding corn is hard work and took a long time. Over time, the trough of a metate got deeper with wear, so that it looked more like a dish than a flat grinding stone.

Pottery

In many parts of the world, the first use of pottery coincided with the adoption of agriculture. People who hunted and gathered wild foods tended to stay on the move. Pottery vessels are fragile and fairly heavy, so they were not widely used by nomadic people. As people settled down and began farming, pottery became more practical.

Early farmers made their pots out of local clays. Making a pot may look simple, but it takes a lot of skill to make a vessel that will not crack while it is drying or shatter when it is being fired. Some of the earliest pottery was not very strong and possibly could not be placed directly over a fire. Instead, stones or clay balls

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This article was prepared by Dr. Robert J. Hoard, state archeologist for Kansas.

Kansans Attend Conference in Oklahoma

A number of KSHS Cultural Resources Division staff members traveled to Norman, Oklahoma, to participate in the 23rd Annual Flint Hills Conference, March 15-18, 2001. This year the meeting was held jointly with the 43rd Annual Caddo Conference at the newly completed Sam Noble Oklahoma Museum of Natural History, University of Oklahoma. The sponsors were the Museum, Caddo tribe, Wichita tribe, and the Oklahoma Archeological Survey.

Four of the conference presentations involved KSHS collections or projects. In "The Johnson-Zahm Cache: Insight into Great Bend Aspect Lithic Acquisition and Utilization," KSHS Special Projects Archeologist C. Tod Bevitt discussed the characteristics of the 60-piece stone flake and biface cache from the Iola, Kansas, vicinity. He offered some comparisons with similar caches and general raw material procurement and utilization practices from habitation complexes in the Great Bend aspect (protohistoric Wichita Indian) core area.

James O. Marshall proposed a new definition for the Lower Walnut focus of the Great Bend aspect, based on his analyses of artifacts from sites in the Arkansas City area. "A Review of the Stone Implements of the Lower Walnut Focus" compared stone tools, pottery, and exotic items with artifact types identified with the Mississippian tradition.

Jim D. Feagins, an archeologist who has contracted with the KSHS to carry out studies of materials governed by the Native American Graves Protection and Repatriation Act and the Kansas Unmarked Burial Sites Protection Act, described the nonintrusive documentation of nine artifacts made from a variety of materials. His presentation, entitled "Nonintrusive Documentation of Selected Burial Artifacts by the Use of CAT Scans and X Rays: Example from NAGPRA/UBS Enhancement and Compliance Study in Kansas," revealed the remarkable images produced by these sophisticated medical technologies.

Dr. Donna C. Roper's paper, "Guy and Mabel Whiteford: Early Kansas Avocational Archaeologists," resulted from her research on the Salina Burial Pit, being performed under contract with the KSHS. She reviewed the archeological fieldwork of the Whiteford family, beyond the excavation of the burial pit, and concluded that they were largely responsible for gathering the information that Waldo R. Wedel used in recognizing the Smoky Hill phase.

Several other papers dealt with Kansas topics, namely "Very Large Projectile Points in Little River Focus: A Discussion" by Dr. Susan C. Vehik, professor of anthropology at the University of Oklahoma; "Late Plains Woodland in the Middle Little Arkansas River Valley" by Mark Latham, contract archeologist with the firm of Burns and McDonnell; and "The Pawnee's Stoneman Animal Lodge" by Dr. Patricia J. O'Brien, professor emeritus at Kansas State University.

KSHS archeology staff Anita Frank, Martin Stein, and Virginia Wulfkuhle further took advantage of the trip to Norman to photocopy records collected at the Smithsonian Institution by Dr. Susan Vehik for her research on Great Bend aspect materials.

This article was written by Virginia Wulfkuhle, public archeologist in the Cultural Resources Division.

Spring Workshops Successful

Kansans recently had the opportunity to take part in a series of workshops around the state that brought the art and science of building preservation to their doorsteps. The Cultural Resources Division offered workshops in Fairway, Salina, Wichita, and Hays.

Attendees, 115 in total, learned about a broad range of preservation issues in the two-day workshops that coupled classroom time with on-site visits of projects in progress. Participants were treated to a broad range of information.

Sandra Hooper, architect for the Cultural Resources Division, started each workshop with an overview of the National and State Registers, an introduction to the various levels of intervention in historic structures, and practical advice on how to plan a preservation project.

Architects Craig Patterson and Don Mars followed with several adaptive

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The holes in the body of this prehistoric cooking pot show attempts to repair a crack.

were heated and placed into a pot of food. This method, called stone boiling, cooked the food at fairly low temperatures. As potters learned to make stronger pots, the vessels were set directly on the fire. This method allowed for the longer cooking times needed to soften some hard seeds, making them more palatable and releasing their full nutritional value.

When metal tools were introduced, they quickly began to replace tools of bone, stone, and clay. Metal hoes and pots lasted longer than their earlier counterparts and thus were valuable trade items. By the 1900s, metal tools and pots had all but replaced their earlier Native American counterparts.